Progress Report: Port and Modal Elasticity Study – Phase II

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Purpose of Study

- Develop analytical methodology and database to predict flows of containerized imports by port and landside channel as a function of rates and fees, transportation service quality, and future infrastructure
- Conduct outreach efforts with stakeholders
- Carry out demonstration analyses

Phase I

- Completed August, 2005
- "Long-run model"
  - 2003-2004 transportation rates import value distributions, flow time statistics
  - Takes mean and standard deviation of container flow times as given and fixed
  - Model calculates predicted container flows as a function of port fees and transportation rates
  - Demonstrated impact of hypothetical container fees at San Pedro Bay

Phase II

(June 2006 – June 2007)

- Outreach to stakeholders
- Update database with changes in import distributions, transportation rates and transportation services
- Develop "Short-run model"
  - Output of model is the predicted container flows (same as Long-run model)
  - Takes infrastructure as given and fixed, calculates predicted flow times

Phase II team

- Leachman & Associates
- Arrellano Associates (outreach)
- Theodore Prince (steamship lines and 3PLs)
- George Fetty (RRs)
- Dr. Anne Goodchild (PNW and analytics)
- David Lehlbach (East Coast and RRs)

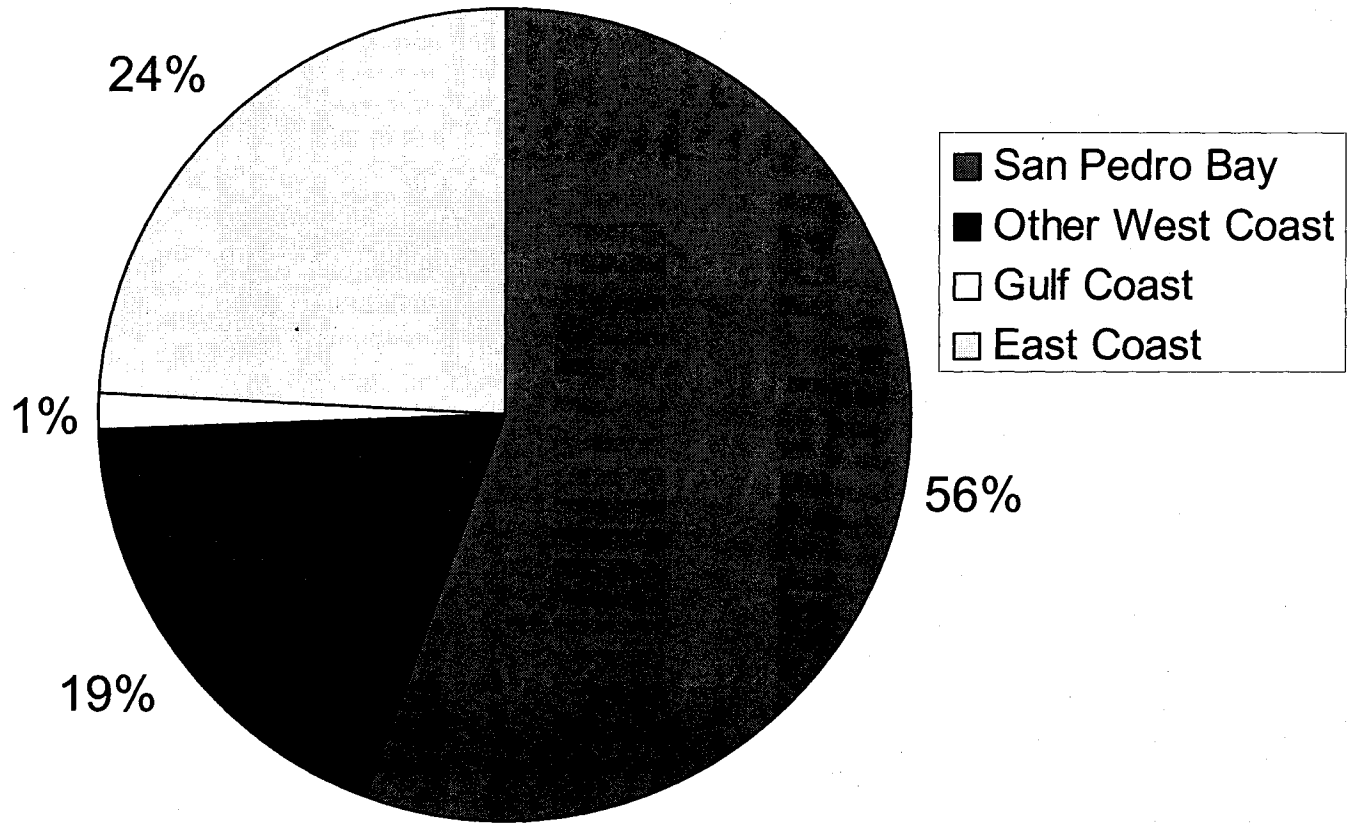
Outreach activities

- Presentation of Phase I results and Phase II interviews held with 3 major importers, 2 major 3PLs, 1 railroad, 2 major terminal operators, 3 dray companies, 4 ports
  - General confirmation of methodology and insights
  - No comment on potential container fees
- More outreach to come

Phase II data collection

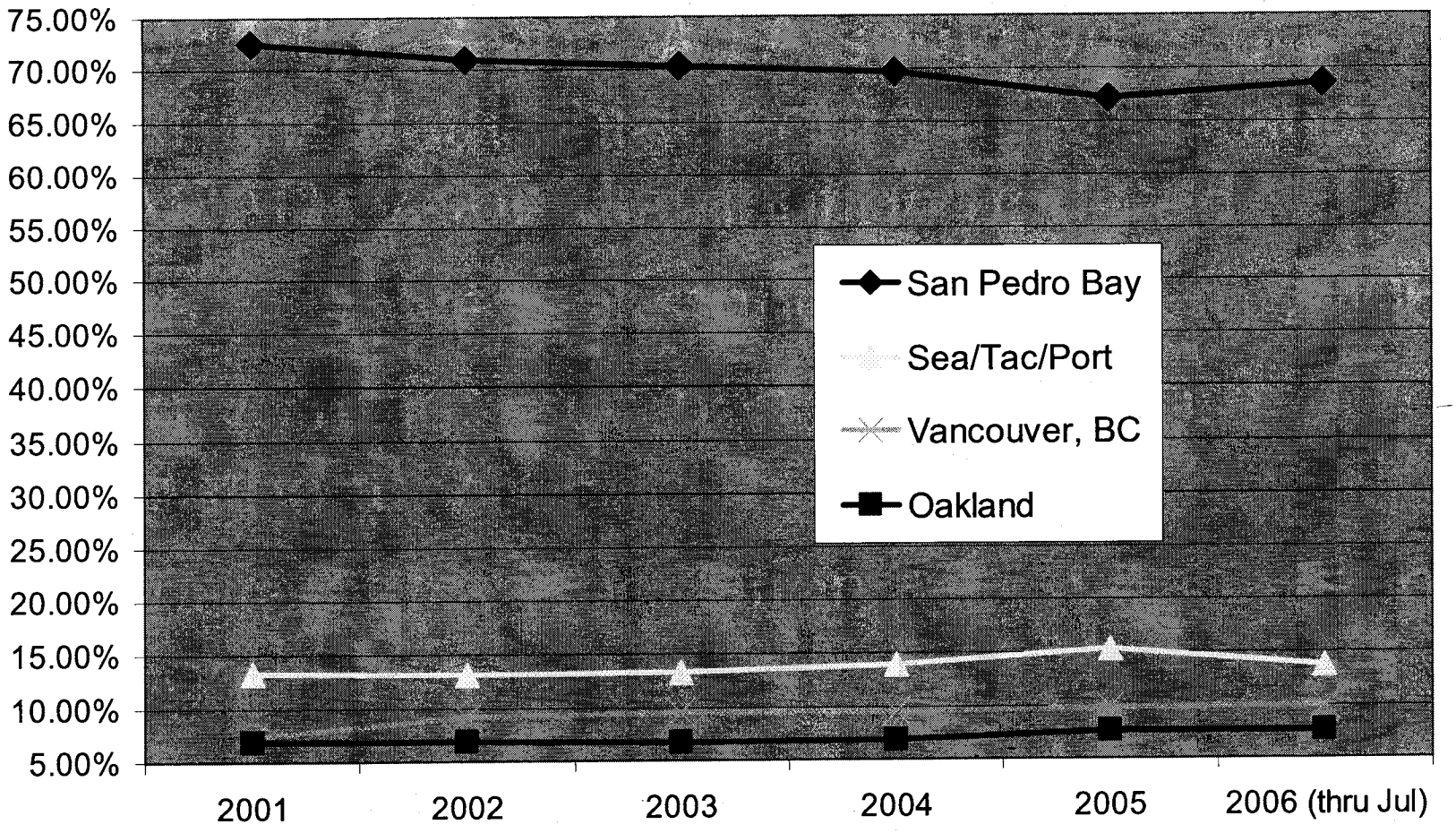
- 2005 PIERS and WTA summaries of customs data obtained from POLB and MARAD, value distribution updated
- Asia – US vessel strings updated to 2006
- Port volumes and port infrastructure updated to 2006
- Update of transportation rate database in progress
- Data collection on channel volume vs. flow time in progress

US Port Shares of 2005 US Containerized Imports from Asia (TEU basis)



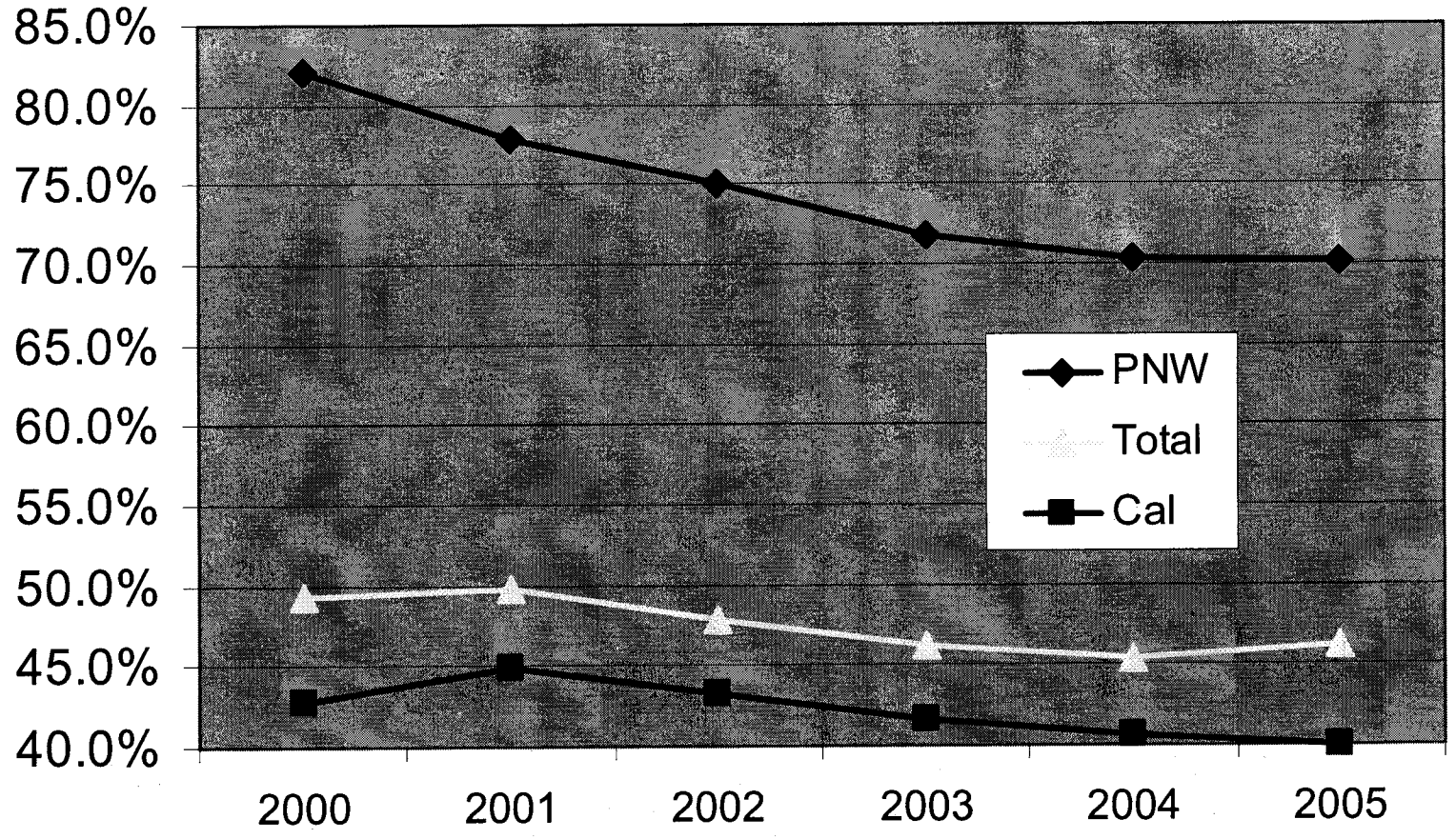
Source: PIERS

Figure 2. Shares of Inbound Loaded Containers at West Coast Ports (TEU basis)



Sources: Port Web Sites

Figure 7. Percent Intermodal Movement of Marine Containers Imported Through US West Coast Ports (TEU Basis)

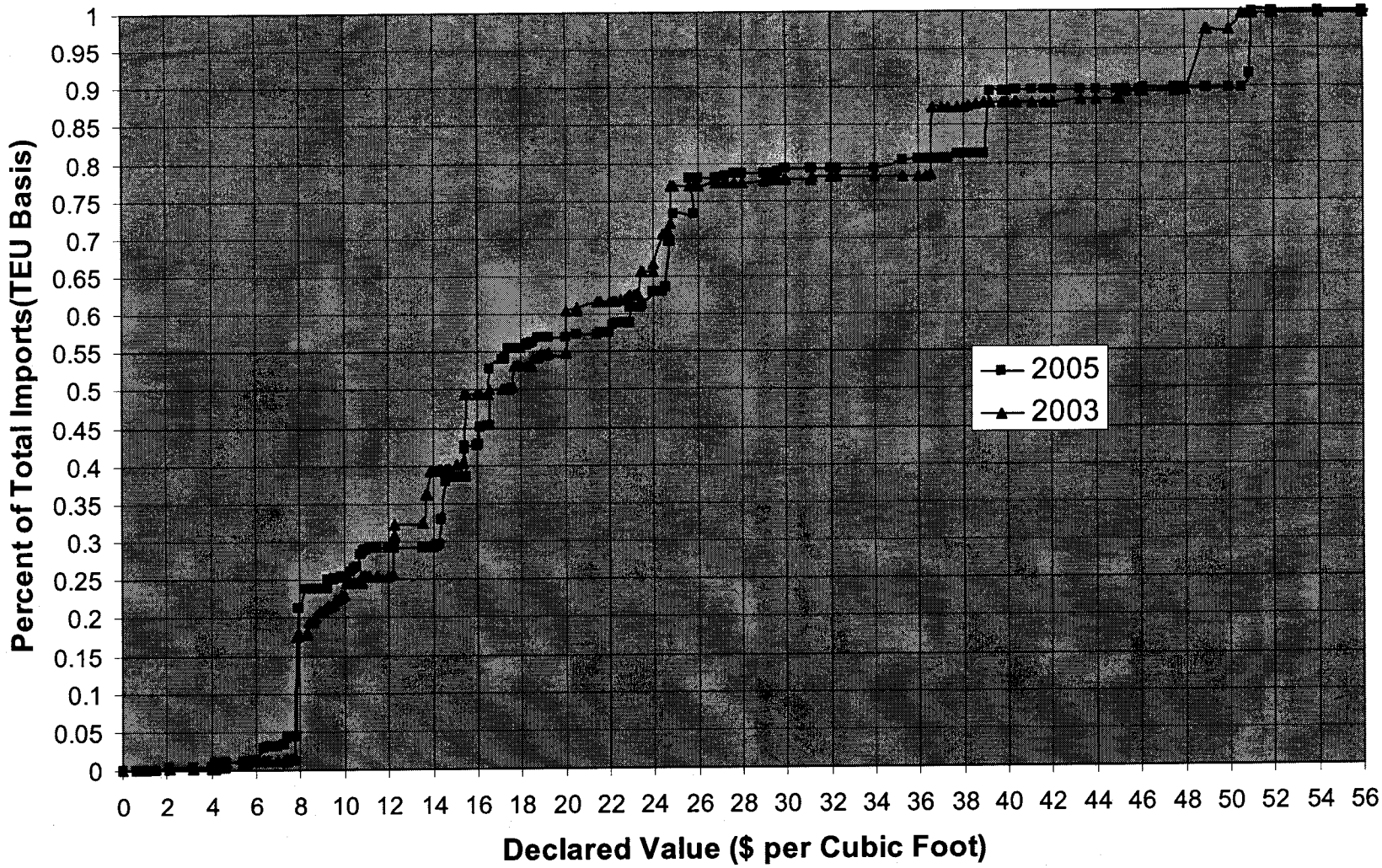


Sources: PMA, IANA

What comprises the SPB share?

- ~37% of marine boxes entering the SPB Ports get on a train (going east of the Rockies)
- The "local" region served by the SPB Ports (So Cal, So NV, AZ, NM, So UT, So Co) encompasses 12% of continental US purchasing power.
- => ~(.12)/(.56) = 21% of inbound marine boxes contain goods that are consumed "locally".
- => ~42% of inbound marine boxes are either trucked out of the "local" region or unloaded in the region and later re-shipped out of region in domestic vehicles (truck or rail).

2003 vs. 2005 Cumulative Distributions of Containerized Asia - US Imports



Sources: PIERS, WTA, PMA

Import distribution

- Average declared values of 2005 Asia – US imports:
  - Via East Coast and Gulf ports: $18.57 per cubic foot
  - Via West Coast ports: $22.66 per cubic foot
  - Overall: $21.66 per cubic foot

Comments on import distribution

- 25% of Asia – US imports are > $26 per cu. ft. in declared value. If distributed nationwide, such goods are most efficiently handled by consolidating/deconsolidating all US volume through the San Pedro Bay ports.
- 25% of Asia – US imports are < $13 per cu. ft. These goods are most economically handled by shipping the marine box intact via the cheapest channel.
- Goods in the other 50% category that are distributed nationwide are most economically handled by using a subset of ports, e.g., 2 on East Coast and 2 on West Coast, to do regional consolidation/deconsolidation

Implications for SPB ports' share

- "Local" region served by SPB ports comprises 12% of total USA purchasing; conservatively, suppose low-value cargoes destined to other regions are all handled via other ports.
- Assume SPB is selected to be one of the regional consol/deconsol centers by all importers in the mid-value group and also to be the center for all importers in the high-value group, and suppose all are nation-wide importers.
- Then the resulting theoretical long-run SPB share of Asia – US imports is:

  (1.0)(.25) + (.25)(.50) + (.12)(.25) = 0.405 (vs. 0.56 now)

- More than 90% of this is amenable to consol/deconsol!